

(FILE 'HOME' ENTERED AT 09:12:04 ON 03 SEP 2004)

FILE 'HCAPLUS, MATBUS, EMA, METADEX, RUSSCI, ALUMINIUM, AEROSPACE'  
ENTERED AT 09:12:41 ON 03 SEP 2004

L1 27423 S TUNGSTEN () CARBID? OR TUNGSTENCARBID? OR WOLFRAM () CARBID?  
L2 1126 S 12070-13-2/RN  
L3 9916 S 12070-12-1  
L4 876 S 11130-73-7  
L5 28576 S L1 OR L2 OR L3 OR L4  
L6 5402 S (WEDDING? OR ANNIVERSAR? OR ENGAGEMENT? OR FINGER? OR JEWELRY  
L7 16665 S NECKLACE? OR BROOCH? OR PENDANT? OR CUFFLINK? OR CUFF () LINK  
L8 49 S L5 AND (L6 OR L7)  
L9 49 DUP REMOVE L8 (0 DUPLICATES REMOVED)

ACCESSION NUMBER: 1995:979002 HCAPLUS  
DOCUMENT NUMBER: 123:347457  
TITLE: High-brightness, high-ductility, high-hardness titanium-based products, and their manufacture, hardening, and surface coloration  
INVENTOR(S): Gladden, Thomas  
PATENT ASSIGNEE(S): Asulab SA, Switz.  
SOURCE: Fr. Demande, 23 pp.  
CODEN: FRXXBL  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2718376	A1	19951013	FR 1994-4221	19940411
FR 2718376	B1	19960614		
CN 1120593	A	19960417	CN 1995-103003	19950317
JP 07315912	A2	19951205	JP 1995-60735	19950320
PRIORITY APPLN. INFO.:			CH 1994-814	A 19940318
			FR 1994-4221	A 19940411

AB The products consist essentially of a mixture comprising a Ti hydride matrix material, and  $\geq 1$  compds. selected from the nitride, carbide, carbonitride, silicide, and boride of Group IIIA, IVA, IVB, VB, VIB, VIIB, and VIII elements, Fe, Zr hydride, Si, Nb, Mo, Cr, W, and V. The products are manufactured by providing a mixture of a temporary binder, Ti hydride powder, and a powder selected from the nitrides, carbides, carbonitrides, silicides, and the compound and elements as above, injecting the mixture into a mold, removing the binder from the greenware, heating the greenware in H to the desired sintering temperature, replacing the H by vacuum or nonreactive atmospheric when reaching the sintering temperature, and cooling the products in the nonreactive atmospheric. The Ti hydride loses its H during the heat treatment. The hardening, and surface coloration are carried out by heat-treating the articles at a predetd. temperature in a flowing C- and N-containing gas for a predetd. duration to provide the articles with a surface coating of  $\geq 1$  of TiC, TiN, and Ti(C,N). The products have low porosity, hardness 300-1200 HV, high ductility and corrosion resistance, and do not irritate the skin, and especially suitable for the manufacture of watch bands and watchcases.

TI High-brightness, high-ductility, high-hardness titanium-based products, and their manufacture, hardening, and surface coloration

L9 ANSWER 12 OF 49 METADEX COPYRIGHT 2004 CSA on STN

ACCESSION NUMBER: 1992(1):57-58 METADEX

TITLE: The Use of System Theory for the Tribological Optimisation of Decorative Coatings.

AUTHOR: Bergmann, E. (Balzers); Dupont, F. (Balzers); Steiger, S. (Balzers)

SOURCE: CEP Consultants. 26-28 Albany St., Edinburgh EH1 3QH, UK. 1991. 256-260. Accession Number: 92(1):72-8  
Conference: IPAT 91, Brussels, Belgium, May 1991

DOCUMENT TYPE: Conference Article

COUNTRY: United Kingdom

LANGUAGE: English

AB Watches with coatings applied by physical vapor deposition were introduced to the market in the midst in the middle of the 1970s by the leading Japanese labels. These coatings served both decorative and wear-protection purposes. B. Zega undertook the first work in this field in Europe at the Battelle Institute in Geneva in 1974. In 1978, Balzers introduced ion-plated titanium nitride coatings to Europe. These were applied to **watch cases** made of stainless steel. However, the first products specifically designed for the special characteristics of PVD coatings were not displayed to the public until the 1983 Basel Trade Fair. This was Cartier's Ferrari collection. The coating was a mixture of carbon and **tungsten carbide**. The watch casings were made of brass. Corrosion protection was assured with a thick film (13  $\mu$  m) of Stellite 6. The three cases given above represent the ideas behind the introduction of PVD coatings: on the one hand, trying to find more cost-effective solutions for producing long-lasting components; and on the other hand, to expand design possibilities through new technologies.

TI The Use of System Theory for the Tribological Optimisation of Decorative Coatings.

L9 ANSWER 16 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1989:538873 HCAPLUS  
 DOCUMENT NUMBER: 111:138873  
 TITLE: Hard **tungsten carbide** alloy  
 INVENTOR(S): Maruyama, Masao; Seki, Atsushi; Minato, Yoshihiro;  
 Maeda, Yoshiki  
 PATENT ASSIGNEE(S): Sumitomo Electric Industries, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01008245	A2	19890112	JP 1987-165049	19870630
PRIORITY APPLN. INFO.:			JP 1987-165049	19870630

AB The hard WC alloy containing WC particles ( $\leq 1 \mu\text{m}$ ), 8-35% Ni, and 0.5-10% Cr is used for **watch cases** or bands. The hard WC alloy shows Vickers hardness 1030-1420, binding strength 8.2-18.2 kg/mm<sup>2</sup>, and no rusting in an aqueous solution (pH 2.5) containing NaCl 20, urea 2, and lactic acid 2 g/h for 24 h.  
 TI Hard **tungsten carbide** alloy

L9 ANSWER 17 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1989:482778 HCAPLUS

DOCUMENT NUMBER: 111:82778

TITLE: Ion plating of ceramic or hard-alloy ornamental part

INVENTOR(S): Enomoto, Yoshitaka

PATENT ASSIGNEE(S): Seiko Instruments and Electronics, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 2 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 63310957	A2	19881219	JP 1987-144911	19870610
PRIORITY APPLN. INFO.:			JP 1987-144911	19870610
AB	Ceramic or hard-alloy parts (especially <b>watch cases</b> ) are ion plated to form an amber-colored layer containing TiC and TiN. Thus, <b>watch cases</b> from WC hard alloy were ion-plated to apply an amber-colored layer resistant to sweat corrosion.			
TI	Ion plating of ceramic or hard-alloy ornamental part			

L9 ANSWER 18 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1989:139967 HCAPLUS  
DOCUMENT NUMBER: 110:139967  
TITLE: Brazing of hard alloy parts for jewelry  
INVENTOR(S): Nagao, Katsuzo; Fushimi, Yasuaki  
PATENT ASSIGNEE(S): Namiki Precision Jewel Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 2 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 63224895	A2	19880919	JP 1987-58652	19870313
PRIORITY APPLN. INFO.:			JP 1987-58652	19870313

AB Hard alloy parts are brazed in vacuum at 250-450° with Ni- and Au-precoated Au-Sn alloy. Thus, WC-base **watch case** parts were brazed at 450° and  $2 + 10^{-5}$  torr for 20 min with a Ni- and Au-precoated Au-20% Sn alloy to form a joint of an excellent bonding strength.

TI Brazing of hard alloy parts for jewelry

L9 ANSWER 19 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1989:177980 HCAPLUS

DOCUMENT NUMBER: 110:177980

TITLE: Manufacture of layered systems

INVENTOR(S): Gaertner, Klaus; Stauch, Joachim; Gruebel, Guenther

PATENT ASSIGNEE(S): VEB Uhrenwerke Ruhla, Ger. Dem. Rep.

SOURCE: Ger. (East), 3 pp.

CODEN: GEXXA8

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DD 259640	A1	19880831	DD 1987-301739	19870413
PRIORITY APPLN. INFO.:			DD 1987-301739	19870413
AB	Layered systems of especially Ni, Fe-Ni, Cr or Ti of reproducible properties			
and	decorative effects are deposited on e.g. watch parts by high-rate			
	plasmatron sputtering. Possibilities of coating brass (MS 58)			
	<b>watch cases</b> with the mentioned layered systems, TiN, WC,			
	TiC, or CrN are discussed, and advantages of the invention coating method			
	vs. electrodeposition are indicated.			
TI	Manufacture of layered systems			

L9 ANSWER 20 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1987:54465 HCAPLUS

DOCUMENT NUMBER: 106:54465

TITLE: Sintered alloys for ornaments

INVENTOR(S): Masumoto, Takeshi; Nishimura, Tomio; Hayashi, Junichi

PATENT ASSIGNEE(S): Nippon Tungsten Co., Ltd., Japan; Suwa Seikosha Co., Ltd.

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 61177351	A2	19860809	JP 1985-19091	19850202
JP 62054856	B4	19871117		

PRIORITY APPLN. INFO.: JP 1985-19091 19850202

AB Sintered superhard WC alloys for ornamenting **watch-case** sides or **necklaces** contain Ni 15-19, TiC and/or TaC 1-5, and Cr, Mo, and/or Cr<sub>3</sub>C<sub>2</sub> 2-5%. The average particle size of WC is 1-2  $\mu$ . The sintered alloys with Vickers hardness 1110-1300, bending strength 220-270 kg/mm<sup>2</sup>, and sp. gr. 12.37-13.63 are corrosion-resistant and solderable.

TI Sintered alloys for ornaments



L9 ANSWER 22 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1985:458062 HCAPLUS  
 DOCUMENT NUMBER: 103:58062  
 TITLE: Alumina-carbide sintered ornamental bodies  
 PATENT ASSIGNEE(S): Nippon Tungsten Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60060976	A2	19850408	JP 1983-170201	19830913
JP 63048825	B4	19880930		

PRIORITY APPLN. INFO.: JP 1983-170201 19830913

AB The materials consist of (1) 100 parts of a mixture of TiC,  $\geq 1$  of Mo<sub>2</sub>C, ZrC, NbC, TaC, WC, and Cr<sub>3</sub>C<sub>2</sub> 17.5-40.0 volume%, and Al<sub>2</sub>O<sub>3</sub> or Al<sub>2</sub>O<sub>3</sub> containing MgO  $\leq 1$  weight% balance. The materials may be sintered by hot-isostatic pressing in a nonoxidizing atmospheric Ornamental bodies prepared from the materials are conductive, can be machined by elec. discharge, and are useful as **watch cases, pendants**, and other parts. Thus, a powder mixture of Al<sub>2</sub>O<sub>3</sub> 82.5 and NbC 17.5 volume% was mixed with TiO<sub>2</sub> 2.5 parts (based on the powder mixture), compacted, presintered at 1400-1800° in an Ar atmospheric, and sintered at a temperature 150° lower than the presintering temperature in an Ar atmospheric (1500 atmospheric pressure) by hot-isostatic pressing to give a sintered part having porosity 0.091 volume%, Charpy impact value 0.11 kg/cm<sup>2</sup>, and sp. resistance 36 m $\omega$ -cm.

TI Alumina-carbide sintered ornamental bodies

ANSWER 23 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1985:171135 HCAPLUS  
 DOCUMENT NUMBER: 102:171135  
 TITLE: Fabrication of **watch cases** or  
 bands  
 PATENT ASSIGNEE(S): Seiko Instruments and Electronics, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 2 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 60006269	A2	19850112	JP 1983-113534	19830623
PRIORITY APPLN. INFO.:			JP 1983-113534	19830623
AB	Grooves are formed on <b>watch cases</b> or bands made from stainless steel, and small pieces made from ceramic or hard alloys such as TaC, TiN, or WC are inserted into the grooves. Au or Ag braze is packed into the gaps between the inserted pieces and the grooves, heated, and polished to give decorative <b>watch cases</b> or bands with a 3-tone appearance.			
TI	Fabrication of <b>watch cases</b> or bands			

L9 ANSWER 24 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1985:171098 HCAPLUS

DOCUMENT NUMBER: 102:171098

TITLE: Multicolored hard alloys for decorative materials

PATENT ASSIGNEE(S): Suwa Seikosha Co., Ltd., Japan; Nippon Tungsten Co., Ltd.

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60004051	A2	19850110	JP 1983-113597	19830622
JP 61059904	B4	19861218		

PRIORITY APPLN. INFO.: JP 1983-113597 19830622

AB The composite alloy contains: (a) golden-colored hard alloy composed of  $\leq 1$  of TaC, TiN, and HfN, with 5-30% binder of  $\geq 1$  of Fe, Ni, Co, Cr, Mo, Mn, and Cu; and (b) black-and-white colored hard alloy composed of  $\geq 1$  of WC, TiC, and NbC, and 5-30% binder of  $\geq 1$  of Fe, Ni, Co, Cr, Mo, Mn, and Cu. Internally polychromatic alloys are especially useful for **watch cases** and tiepins. Thus, a golden colored hard alloy of 90-93% TaC and a binder of Ni, Cr, and Mo was shaped and sintered at 1350-1370°, to give a strip having transverse rupture strength 150-180 kg/mm<sup>2</sup>. Black-and-white hard alloy of 85-87% WC and binder of Ni, Cr, and Mo was shaped and sintered at 1350-1370°, to give a strip having transverse rupture strength 250-300 kg/mm<sup>2</sup>. The strips were alternately laminated, and sintered at 1320-1340° to give a composite having transverse rupture strength 200-250° with golden and black-and-white stripes.

TI Multicolored hard alloys for decorative materials

ANSWER 25 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1985:189748 HCAPLUS  
 DOCUMENT NUMBER: 102:189748  
 TITLE: Black zirconia based sinters  
 PATENT ASSIGNEE(S): Toshiba Tungaloy Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 59227770	A2	19841221	JP 1983-100650	19830606
JP 03023505	B4	19910329		

PRIORITY APPLN. INFO.: JP 1983-100650 19830606

AB The sinters are composed of black coloring agent(s) 0.05-50 volume%, stabilizing agent(s), and ZrO<sub>2</sub> the balance, and are prepared by heating at 1500-1800° in an inert gas or vacuum. The coloring agents are preferably selected from metal(s) belonging to the IVB, VB, VIB, and Fe Group metals and/or their alloys. The coloring agents are preferably compd(s). selected from carbides, borides, silicides of the IVB, VB, VIB and Fe Group metals, and solid solns. of these compds. The sinters preferably contain C and/or graphite ≤20 parts per 100 parts of the coloring agent(s). The black sinters have excellent corrosion resistance, toughness, and heat resistance and are useful for ornamental parts such as external parts of watches and **brooches** and as abrasion-resistant components such as fishing gears and sliding parts. Thus, a 99.4:0.6:0.01 (volume) powder mixture of Y<sub>2</sub>O<sub>3</sub>-stabilized ZrO<sub>2</sub>, W, and C was ground with alc., dried, compacted, and sintered in Ar at 1500° to give a lustrous black sinter having Rockwell A hardness 91.0, flexural strength 100 kg/mm<sup>2</sup>, and significantly improved corrosion resistance in artificial perspiration at pH 2.5.

TI Black zirconia based sinters

L9 ANSWER 26 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1984:515417 HCAPLUS  
DOCUMENT NUMBER: 101:115417  
TITLE: Manufacture of hard alloy for ornamental uses  
PATENT ASSIGNEE(S): Suwa Seikosha Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 59076801	A2	19840502	JP 1982-186503	19821023
JP 01028825	B4	19890606		

PRIORITY APPLN. INFO.: JP 1982-186503 19821023

AB Particles selected from Group IVB and VB carbides and nitrides, WC, and hard alloy containing the compds. as principal constituents are mixed with a metal binder and the compd(s). having a different color from that of the particles. The components are sintered, polished, lapped, and chem. or electrolytically etched. The method gives hard alloys having 2 or 3 kinds of color tones. The alloys are useful for **necklaces, earrings, rings, bracelets, watch cases, and lighters.** Thus, a powder mixture of TaC 50, WC 40, Co 8, and Cr 2% was vacuum sintered at 1300-1400°, hot isostatically pressed at 1350° at 500 atmospheric, polished, lapped, and etched in an aqueous solution containing K3Fe(CN)6 and KOH to color the WC portions black and TaC portions gold. The resulting alloy was not discolored in a corrosion test with artificial human sweat.

TI Manufacture of hard alloy for ornamental uses

L9

ANSWER 27 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1984:496201 HCAPLUS  
 DOCUMENT NUMBER: 101:96201  
 TITLE: Colored hard **watch cases**  
 PATENT ASSIGNEE(S): Suwa Seikosha Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 59053670	A2	19840328	JP 1982-165219	19820922
PRIORITY APPLN. INFO.:			JP 1982-165219	19820922

AB **Watch cases** from a hard metal containing  $\geq 1$  of carbides and nitrides are coated with  $\geq 1$  of metal colorant films and then treated at statically isotropic conditions at high temperature and pressure to diffuse the colorant. Thus, a 84%WC-Ni-Co-Cr [91501-34-7] **watch case** was electroless-coated with Ni and then with Au-Ni-In [87467-01-4]. The coated case was heated at 1000° and 1600 kg/cm<sup>2</sup> in Ar and cooled to give a gold-color case having Vickers hardness  $\geq 1300$  and resisting corrosion.

TI Colored hard **watch cases**

L9 ANSWER 28 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1984:477451 HCAPLUS  
DOCUMENT NUMBER: 101:77451  
TITLE: Sintered hard alloy for wrist watch exteriors  
PATENT ASSIGNEE(S): Suwa Seikosha Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 59050152	A2	19840323	JP 1982-159091	19820913
PRIORITY APPLN. INFO.:			JP 1982-159091	19820913
AB	Carbides and nitrides of $\geq 1$ of IVB and VB group transition metals, and powdered WC $< 0.6 \mu$ are bonded with $\geq 1$ of Au and Pd $\geq 50\%$ and of Ni and Co balance. Thus, powdered Pd (average $0.30 \mu$ size) 8, Ni 3, Co (1.3-2.0 $\mu$ each) 5, VC 0.9%, and balance WC $0.5 \mu$ were ball-milled wet for 120 h, dried, compacted, and heated at $800^\circ$ for 1 and at $1100-1400^\circ$ for 1-3 h in vacuum. No corrosion was observed in simulated sweat at $40^\circ$ and pH 4.0 after 24 h. The Vickers hardness was 1550, and the alloy showed a good polished surface and impact resistance.			
TI	Sintered hard alloy for wrist watch exteriors			

L9 ANSWER 29 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1984:214258 HCAPLUS

DOCUMENT NUMBER: 100:214258

TITLE: Sintered superhard alloy for watch exteriors

PATENT ASSIGNEE(S): Suwa Seikosha Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 59016946	A2	19840128	JP 1982-127313	19820720
PRIORITY APPLN. INFO.:			JP 1982-127313	19820720

AB The sintered alloy suitable for **watch cases** consists of:  $\geq 1$  of IVB, VB group metal carbides, nitrides, and WC; and (b) binder metals comprising  $>50\%$  Au + Pd and balance  $\geq 1$  of Ni, Co, and Mo. Thus, powdered WC  $1.3 \mu$ , 0, Au + Pd (7:3)  $3.0 \mu$  10, Ni 7, and Co 3% ( $1.3$ - $2.0 \mu$  each) were ball-milled, dried, sintered at  $1100$ - $400^\circ$  for 1-3 h in vacuum, and polished to a mirror surface. The Vickers hardness was 1080, impact resistance good, and no tarnish was observed in simulated sweat at pH 4.7 and  $40^\circ$  after 24 h.

TI Sintered superhard alloy for watch exteriors



L9 ANSWER 30 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1984:214241 HCAPLUS  
DOCUMENT NUMBER: 100:214241  
TITLE: Sintered hard alloy for watch exteriors  
PATENT ASSIGNEE(S): Suwa Seikosha Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 59016945	A2	19840128	JP 1982-127312	19820720
PRIORITY APPLN. INFO.:			JP 1982-127312	19820720
AB	The sintered alloy consists of $\geq 1$ IVB or VB Group metal carbides and/or nitrides, and binder comprising $\geq 50\%$ Pd and balance Ni and/or Co. Thus, powders of WC 80, Pd 10, Ni 7, and Co 3% were wet ball milled, dried, vacuum sintered 1-3 h at 1100-1400°, and polished to a mirror surface. The Vickers hardness was 1095, no corrosion was observed in simulated sweat at pH 4.7 and 40° after 24 h, and the impact resistance was satisfactory.			
TI	Sintered hard alloy for watch exteriors			

L9 ANSWER 31 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1984:214240 HCAPLUS  
DOCUMENT NUMBER: 100:214240  
TITLE: Sintered hard alloy for watch exteriors  
PATENT ASSIGNEE(S): Suwa Seikosha Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 59013045	A2	19840123	JP 1982-123461	19820714
PRIORITY APPLN. INFO.:			JP 1982-123461	19820714

AB The sintered alloy consists of  $\geq 1$  IVB or VB Group metal carbides and/or nitrides, and binder comprising  $\geq 50\%$  Au and balance  $\geq 1$  Ni, Co, Mo, and Cr. Thus, powders of WC 80, Au 10, Ni 7, and Co 3% were wet ball milled, dried, vacuum sintered 1-3 h at 1100-400°, and polished to mirror surface. The Vickers hardness was 1090, no corrosion was observed in simulated sweat at pH 4.7 and 40° after 24 h, and the impact resistance was satisfactory.

TI Sintered hard alloy for watch exteriors

L9 ANSWER 32 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1984:196492 HCAPLUS  
DOCUMENT NUMBER: 100:196492  
TITLE: Coating of sintered hard alloys with hard coatings  
PATENT ASSIGNEE(S): Japan Vacuum Engineering Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 2 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 58174574	A2	19831013	JP 1982-55338	19820405
PRIORITY APPLN. INFO.:			JP 1982-55338	19820405
AB	In coating WC-Co sintered alloys with a hard coating of material such as TiN or TiC by ion plating or chem. deposition, the surface of the hard alloy is cleaned with a neutral synthetic detergent before coating. The hard alloys coated by the method have significantly decreased pinholes, and the method is useful for manufacturing <b>watch cases</b> . Thus, WC-Co hard alloy (JIS-B-4053 P10 [37269-25-3]) specimens were washed with a neutral synthetic detergent (Clink T [90015-08-0]), coated with TiN by ion plating, and visually tested to show average pinholes 0.7/piece vs. 10/piece for WC-Co washed with acetone.			
TI	Coating of sintered hard alloys with hard coatings			

L9 ANSWER 34 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1983:148241 HCAPLUS  
DOCUMENT NUMBER: 98:148241  
TITLE: **Watch cases**  
PATENT ASSIGNEE(S): Suwa Seikosha Co., Ltd., Japan  
SOURCE: Jpn. Tokkyo Koho, 3 pp.  
CODEN: JAXXAD  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 57048633	B4	19821016	JP 1974-27439	19740309
PRIORITY APPLN. INFO.:			JP 1974-27439	19740309
AB	The cavity of a mold is spray-coated with oxides, carbides, nitrides, silicides, borides, sulfides, and/or intermetallic compds., then filled with metals, the mold is removed, and the metal is polished to obtain a hard <b>watch case</b> . Thus, a BN mold was spray-coated on the cavity with a powdered mixture of WC 95 and Co 5%, then filled with a mixture of Ni 27, Co 40, Cr 19%, and balance Si + B by spraying under nonoxidizing atmospheric, the mold was removed, and the metal was polished and machined to make a hard <b>watch case</b> .			
TI	<b>Watch cases</b>			

L9 ANSWER 35 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1981:126064 HCAPLUS  
DOCUMENT NUMBER: 94:126064  
TITLE: Decorated **watch cases**  
PATENT ASSIGNEE(S): Daini Seikosha Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 55079807	A2	19800616	JP 1978-151567	19781207
PRIORITY APPLN. INFO.:			JP 1978-151567	19781207
AB	Decorative plates made of metal compds. and metals are inserted into powdered metals, compacted, and sintered at high temps., to make decorative <b>watch cases</b> having no interface gap. Thus, a decorative plate made of hard alloy containing WC, TiC, TiN, Al2O3, and CrB with Ni binder was inserted into powdered stainless steel, compacted, and sintered at high temps. to make a decorated <b>watch case</b> .			
TI	Decorated <b>watch cases</b>			

L9 ANSWER 36 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1981:126078 HCAPLUS  
DOCUMENT NUMBER: 94:126078  
TITLE: Decorative **watch cases**  
PATENT ASSIGNEE(S): Suwa Seikosha Co., Ltd., Japan  
SOURCE: Jpn. Tokkyo Koho, 2 pp.  
CODEN: JAXXAD  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 55031176	B4	19800816	JP 1979-32039	19790319
JP 55002788	A2	19800110		

PRIORITY APPLN. INFO.: JP 1979-32039 19790319

AB WC-ZrN solid solution powder is mixed with 1-50% Ni, Co, Cr, Mo, and/or Fe, molded, and sintered. Thus, WC-70% ZrN solid solution powder average diameter  
2

$\mu$  was mixed with Fe 7 and Cr 8%, ball milled 100 h, mixed with 1% paraffin, compacted at 2.5 tons/cm<sup>2</sup>, vacuum presintered 1 h at 900°, and sintered 1.5 h at 1350° to obtain a silvery-white **watch case** with a Vickers hardness of 1370.

TI Decorative **watch cases**

L9 ANSWER 37 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1981:144057 HCAPLUS

DOCUMENT NUMBER: 94:144057

TITLE: Metallic article provided with a wear and corrosion resistant protective coating of **tungsten carbide**

INVENTOR(S): Yee, Kim Shee; Straub, Werner

PATENT ASSIGNEE(S): Sulzer, Gebr., A.-G., Switz.

SOURCE: Eur. Pat. Appl., 11 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 18432	A1	19801112	EP 1979-102206	19790702
EP 18432	B1	19820224		
R: AT, BE, CH, DE, FR, GB, LU, NL, SE				
CH 639598	A	19831130	CH 1979-4189	19790504
PRIORITY APPLN. INFO.:			CH 1979-4189	19790504

AB Small parts of Al and Cu alloys for the watch industry are coated with a corrosion- and scratch-resistant W carbide layer, and a  $\geq 20 \mu$  interlayer of Ni, Co, or their compds. is applied to increase the carbide-to-substrate adhesion and prevent embedding of the hard coating in the soft substrate. The hardness and thermal expansion coefficient of the interlayer are between those of the carbide film and substrate. Thus, an Argentan alloy [77073-12-2] containing Cu 61, Ni 18, Mn 0.5, and Zn balance was electrolessly coated with a 25  $\mu$ -thick NiP interlayer in a  $\text{NiSO}_4\text{-NaH}_2\text{PO}_2$  solution and subsequently coated with a 6  $\mu$ -thick film of **W<sub>2</sub>C** and **W<sub>3</sub>C** by chem. vapor deposition at 450° by using WF<sub>6</sub> and C<sub>6</sub>H<sub>6</sub>. The thermal expansion coefficient of the **W<sub>2</sub>C**/**W<sub>3</sub>C** coating, NiP interlayer, and substrate were (5-6) + 10-6, 13 + 10-6, and 17 + 10-6/°, resp. Corresponding Vickers hardness values were 2200, 1000, and 140.

TI Metallic article provided with a wear and corrosion resistant protective coating of **tungsten carbide**

L9 ANSWER 38 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1980:167885 HCAPLUS

DOCUMENT NUMBER: 92:167885

TITLE: Decorative pattern formation on **watch cases** and bands

INVENTOR(S): Enomoto, Tadao; Futagami, Shigeru; Ando, Naotake

PATENT ASSIGNEE(S): Citizen Watch Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 54148145	A2	19791120	JP 1978-56986	19780513
JP 61023273	B4	19860605		

PRIORITY APPLN. INFO.: JP 1978-56986 19780513

AB Uneven decorative patterns are formed on surface-hardened **watch cases** and bands by laser working. Thus, WC **watch cases** were treated in a laser apparatus for decorative pattern formation. When the **watch cases** were sprayed with a solution containing NaCl 50, CuCl<sub>2</sub> 0.2 g/L, and HOAc 3 mL/L at 35°, no change was observed even after 72 h.

TI Decorative pattern formation on **watch cases** and bands



L9 ANSWER 39 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1979:27888 HCAPLUS

DOCUMENT NUMBER: 90:27888

TITLE: **Tungsten carbide coating on watch cases**

INVENTOR(S): Nakagawa, Tetsuo; Shimodaira, Kenichi

PATENT ASSIGNEE(S): Suwa Seikosha Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 53092375	A2	19780814	JP 1976-159765	19761230
PRIORITY APPLN. INFO.:			JP 1976-159765	19761230

AB A **watch case** having a Vickers hardness of 280-700 at  $\leq 450^\circ$  is coated with 0.3-8.0  $\mu$ -thick WC having a Vickers hardness of  $\geq 800$  and W/C ratio of (1.3-0.9):(0.7-1.1). Thus, a Cu-19.5 Mn-20.3% Ni alloy [12782-79-5] **watch case** was age hardened and ion plated with a 1.5  $\mu$ -thick WC (W/C = 1) coating having blackish-silver color.

TI **Tungsten carbide coating on watch cases**

L9 ANSWER 43 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1977:7961 HCAPLUS  
DOCUMENT NUMBER: 86:7961  
TITLE: Jewellery article with decorative coating  
INVENTOR(S): Pacher, Oskar; Schintlmeister, Wilfried  
PATENT ASSIGNEE(S): Metallwerk Plansee A.-G., Austria  
SOURCE: Fr. Demande, 10 pp.  
CODEN: FRXXBL  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2285100	A1	19760416	FR 1975-28198	19750915
FR 2285100	B3	19790629		
AT 7407597	A	19760215	AT 1974-7597	19740920
AT 333067	B	19761110		
DE 2540862	A1	19760408	DE 1975-2540862	19750913
SE 7510551	A	19760322	SE 1975-10551	19750919
JP 51116768	A2	19761014	JP 1975-113574	19750919
CH 589520	A	19770715	CH 1975-12223	19750919
			AT 1974-7597	19740920

PRIORITY APPLN. INFO.:

AB Hard, colored coatings of Group III-VI metal carbides, nitrides, borides, silicides, and oxides are used on costume jewelry by chem. vapor deposition to increase the abrasion and corrosion resistance. Thus, on a W **bracelet**, a golden color was obtained by coating with WC and TiC. The **bracelet** was exposed to a mixture of WF<sub>6</sub>, H, and C<sub>2</sub>H<sub>4</sub> for 15 min at 900°. TiCl<sub>4</sub> was gradually added during 25 min, while the WF<sub>6</sub> flow was decreased to zero. The treatment was continued for 30 min. The **bracelet** had a 1μ WC inner layer and a 3μ WC-TiC layer. The TiC concentration decreased with increasing depth.

TI Jewellery article with decorative coating

L9 ANSWER 44 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1976:21294 HCAPLUS  
 DOCUMENT NUMBER: 84:21294  
 TITLE: Super-hard alloy for portable **watch cases**  
 INVENTOR(S): Fukunaga, Yasuto; Morita, Yoshio  
 PATENT ASSIGNEE(S): Suwa Seikosha Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 50119732	A2	19750919	JP 1974-25290	19740306
JP 58000508	B4	19830106		

PRIORITY APPLN. INFO.: JP 1974-25290 19740306

AB Carbide-type golden, super-hard alloys useful for manufacture of **watch cases** are manufactured by diffusing Au or its alloys into the surface of super-hard alloys made from carbides such as WC, TiC, TaC, and NbC and binding metals such as Fe, Ni, Co, and Mo. Thus, a WC-22% Co alloy [55351-78-5] was molded to a **watch case**, diamond-polished, washed with Triclene, coated with Au [7440-57-5] to a thickness of 2 $\mu$  by using a cathode sputtering device, and heated in cracked NH<sub>3</sub> gas at 800° for 1 hr to obtain a golden alloy. The alloy had Vickers hardness of 1100-1200.

TI Super-hard alloy for portable **watch cases**

L9 ANSWER 46 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1975:174420 HCAPLUS

DOCUMENT NUMBER: 82:174420

TITLE: **Watch case**

INVENTOR(S): Okada, Shoji

PATENT ASSIGNEE(S): Tokyo Shibaura Electric Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 49106411	A2	19741009	JP 1973-18398	19730216
PRIORITY APPLN. INFO.:			JP 1973-18398	19730216
AB	Sintered products containing TiN, WC, TaC, and 1-30% Fe, Co, Ni, and/or Cr have high strength, hardness, corrosion resistance, and weathering resistance and are useful for production of <b>watch cases</b> . Thus, powdered TiN (0.7 $\mu$ ) 40, powdered WC (1.0 $\mu$ ) 20, powdered TaC (1.0 $\mu$ ) 20, and powdered Co (1.0 $\mu$ ) 10 parts were mixed, compression-molded with 5% paraffin at 600 kg/cm <sup>2</sup> , heated in N atmospheric to 1700° at a heating rate of 500°/hr, and hot-pressed at 400 kg/cm <sup>2</sup> for 20 min to obtain a sintered product having d. 7.50 g/cm <sup>3</sup> , bending strength 102 kg/mm <sup>2</sup> , and Vickers hardness 1804 kg/mm <sup>2</sup> . The sintered product was not corroded even after spraying 5% NaCl solution at 85° on the surface for 5 hr.			
TI	<b>Watch case</b>			

L9 ANSWER 47 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1975:174421 HCAPLUS

DOCUMENT NUMBER: 82:174421

TITLE: **Watch case**

INVENTOR(S): Okada, Shoji

PATENT ASSIGNEE(S): Tokyo Shibaura Electric Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 49106410	A2	19741009	JP 1973-18397	19730216
PRIORITY APPLN. INFO.:			JP 1973-18397	19730216
AB Sintered products containing TiN, WC, TiC, TaC, and 1-30% Fe, Co, Ni, and/or Cr have high strength, hardness, corrosion resistance, and weathering resistance and are useful for manufacture of <b>watch cases</b> . Thus, powdered TiN (0.7 $\mu$ ) 40, powdered WC (1.0 $\mu$ ) 25, powdered TiC (1.0 $\mu$ ) 15, TaC 10, powdered Co (1.0 $\mu$ ) 10 parts were mixed, compression-molded with 5% paraffin at 600 kg/cm <sup>2</sup> , heated in N atmospheric to 1700° at 500°/hr, and hot-pressed at 400 kg/cm <sup>2</sup> for 20 min to obtain a sintered product having d. 6.80 g/cm <sup>3</sup> , bending strength 128 kg/mm <sup>2</sup> , and Vickers hardness 2100 kg/mm <sup>2</sup> . The sintered product was not corroded even after spraying 5% NaCl solution at 85° on the surface for 5 hr.				
TI <b>Watch case</b>				

L9 ANSWER 48 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1975:174422 HCAPLUS  
DOCUMENT NUMBER: 82:174422  
TITLE: **Watch case**  
INVENTOR(S): Okada, Shoji  
PATENT ASSIGNEE(S): Tokyo Shibaura Electric Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 49106409	A2	19741009	JP 1973-18396	19730216
PRIORITY APPLN. INFO.:			JP 1973-18396	19730216
AB	Sintered products containing TiN, WC, TiC, and 1-30% Fe, Co, Ni, and/or Cr have high strength, hardness, corrosion resistance, and weathering resistance and are useful for manufacture of <b>watch cases</b> . Thus, powdered TiN (0.7 $\mu$ ) 40, powdered WC (1.0 $\mu$ ) 20, powdered TiC (1.0 $\mu$ ) 20, and powdered Co (1.0 $\mu$ ) 10 parts were mixed, compression-molded with 5% paraffin at 600 kg/cm <sup>2</sup> , heated in N atmospheric to 1700° at 500°/hr, and hot-pressed at 400 kg/cm <sup>2</sup> for 20 min to obtain a sintered product having d. 6-10 g/cm <sup>3</sup> bending strength 130 kg/mm <sup>2</sup> , and Vickers hardness 1932 kg/mm <sup>2</sup> . The sintered product was not corroded even after spraying 5% NaCl solution at 85° on the surface for 5 hr.			
TI	<b>Watch case</b>			

L9 ANSWER 49 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1975:6886 HCAPLUS  
DOCUMENT NUMBER: 82:6886  
TITLE: Hard alloys for jewelry  
INVENTOR(S): Kaneko, Akitada; Nishimura, Tomio; Miyashita, Hirotochi  
PATENT ASSIGNEE(S): Nippon Tungsten Co., Ltd.  
SOURCE: Ger. Offen., 9 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 2401983	A1	19740725	DE 1974-2401983	19740116
JP 49095810	A2	19740911	JP 1973-8140	19730118
FR 2214756	A1	19740819	FR 1974-391	19740107
CH 585274	A	19770228	CH 1974-164	19740108
IT 1009557	A	19761220	IT 1974-19316	19740111
GB 1404734	A	19750903	GB 1974-1823	19740115
			JP 1973-8140	19730118

PRIORITY APPLN. INFO.:

AB Hard alloys of good corrosion resistance and Vickers hardness 1215-1543 containing WC 0-70, VB2 0-60, NbB 0-60, TaB2 0-60, CrB 0-60, MoB2 0-95, WB 0-60, VB 0-60, Ni 0-40, Co 0-30, Fe 0-30, Cr 0-10, Mo 0-20, and W 0-10 volume% were made by wet-ball milling the powdered starting mixts., pressing, and sintering at 1400-1500°. Thus, a mixture containing MoB2 95, Ni 4, and Mo 1 volume% was wet-ball milled 100 hr, pressed at 1 ton/cm<sup>2</sup>, and sintered 1 hr at 1400° in vacuo to give a hard alloy of Vickers hardness 1543 as compared with 1215 for a conventional 70:30 WC-Co alloy.

TI Hard alloys for jewelry